

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-20 are pending in the application, with claims 1 and 11 being the independent claims. Claims 1, 4, 11, and 12 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

Barton and Smith

Claims 1-3, 5, 10-12, 14, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton et al, U.S. Patent No. 6,654,431 (Barton) in view of Smith, U.S. Patent No. 5,365,470 (Smith). Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, the combined references must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981 (CCPA 1974). The combination of Barton and Smith does not teach each and every element of amended independent claims 1 and 11. As discussed in Applicant's disclosure, the "main advantage of the invention is that the processing of the lower band, or bands, can be performed at a lower speed. Primarily this means that the time equaliser 234 and the echo canceller 242 consume less CPU processing." (Specification, p. 9, lines 6-9).

Neither Barton nor Smith teach or suggest a receiver including "each of the plurality of demodulators is configured to demodulate a data signal having a different one of the plurality of frequency bands of the multi-tone, multi-band signal, and is configured to utilize a different sampling rate, each demodulator includes a discrete Fourier transform module and at least two of the plurality of demodulators have different discrete Fourier transform sizes, each demodulator includes a time equalizer coupled to the input of the discrete Fourier transform module, at least one of the plurality of demodulators receives a downsampled data signal, and the plurality of demodulators are configured to perform demodulation in parallel," as recited in amended independent claim 1.

Furthermore, neither Barton nor Smith teach or suggest a method including "equalizing each of the plurality of data signals in the time domain; and demodulating, in parallel each of the plurality of equalized data signals in a separate demodulator using a discrete Fourier transform, wherein each demodulator utilizes a different sampling rate and wherein at least two demodulators use different size discrete Fourier transforms," as recited in amended independent claim 11.

Additionally, in order to establish a prima facie case of obviousness, "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." MPEP §2142. Applicant submits that no suggestion or motivation to combine Barton with Smith to achieve Applicant's invention is present.

Barton describes a receiver having a plurality of essentially identical processing paths for "diversity reception." Each processing path receives the same RF signal and

separately processes the signal. The results of the processing by the essentially identical processing paths are combined to produce the "best" signal for detection. Nowhere does Barton suggest that the received signal be downsampled in one or more processing paths prior to performing the FFT. Furthermore, the introduction of downsampling would increase the computational complexity of the receiver in Barton. Thus, no suggestion or motivation exists to combine Smith with Barton.

For at least the foregoing reasons, amended independent claims 1 and 11 are patentable over the combination of Barton and Smith. Claims 2, 3, 5, and 10 depend from claim 1 and claims 12, 14, and 17 depend from claim 11. For at least the above reasons, and further in view of their own features, claims 2, 3, 5, 10, 12, 14, and 17 are patentable over the combination of Barton and Smith. Reconsideration and withdrawal of this rejection is therefore respectfully requested.

Barton, Smith, and Allpress

Claims 4 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Smith as applied to claim 1, and further in view of Allpress, et al, U.S. Patent No. 6,496,546 (Allpress). Applicant respectfully traverses this rejection.

Claim 4 depends from claim 1 and claim 13 depends from claim 11. Allpress does not overcome all of the deficiencies of Barton and Smith relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 4 and 13 are patentable over the combination of Barton, Smith, and Allpress. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Smith, and Ho

Claims 6-8 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Smith as applied to claim 5 and further in view of Ho, et al, U.S. Patent No. 5,317,596 (Ho). Applicant respectfully traverses this rejection.

Claims 6-8 depend from claim 1 and claim 15 depends from claim 11. Ho does not overcome all of the deficiencies of Barton and Smith relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 6-8 and 15 are patentable over the combination of Barton, Smith, and Ho. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Smith, and Agee

Claims 9 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Smith as applied to claim 1 and further in view of Agee, et al, U.S. Patent No. 6,128,276 (Agee). Applicant respectfully traverses this rejection.

Claim 9 depends from claim 1 and claim 16 depends from claim 11. Agee does not overcome all of the deficiencies of Barton and Smith relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 9 and 16 are patentable over the combination of Barton, Smith, and Agee. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Smith, and Liu

Claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Smith as applied to claim 1 and further in view of Liu, et al, U.S. Patent No. 6,442,195 (Liu). Applicant respectfully traverses this rejection.

Claim 18 depends from claim 11. Liu does not overcome all of the deficiencies of Barton and Smith relative to claim 11, described above. For at least these reasons, and further in view of its own features, claim 18 is patentable over the combination of Barton, Smith, and Liu. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Smith, and Kahre

Claims 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Smith as applied to claim 1 above and further in view of Kahre, U.S. Patent No. 5,680,388 (Kahre). Applicant respectfully traverses this rejection.

Claims 19 and 20 depend from claim 11. Kahre does not overcome all of the deficiencies of Barton and Smith relative to claim 11, described above. For at least these reasons, and further in view of their own features, claims 19 and 20 are patentable over the combination of Barton, Smith, and Kahre. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Lori A. Gordon
Attorney for Applicant
Registration No. 50,633

Date: January 16, 2007

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600